Anthrax

Anthrax is an acute infectious disease caused by bacteria called *Bacillus anthracis*. The anthrax bacterium produces spores (small resistant cells) which are capable of surviving for many years in the environment. Anthrax most commonly occurs in wild or domesticated warm-blooded grazing animals such as sheep and cattle, but can infect humans.

Anthrax is a very rare disease in Australia, and usually occurs in farmers or other people who have close contact with animals or their products, especially wool, hair or skins. Infection can involve the skin, if the bacteria enter a cut or abrasion on the skin. It can also occur if spores are inhaled or if meat from an infected animal is eaten. Symptoms vary depending on how the disease was contracted.

Cutaneous anthrax (involving the skin) begins as a raised itchy bump resembling an insect bite, which then develops into a vesicle (blister), then into a painless ulcer with a characteristic black area in the centre. There is usually marked swelling around the area and lymph glands in the adjacent area may swell. Up to 20% of untreated cases may result in death, but deaths are rare with appropriate antibiotic treatment.

Inhalational anthrax, where infection occurs due to spores being breathed in, may initially resemble flu-like illness, but after several days severe breathing problems and shock may develop. Without treatment, death occurs one to two days after the onset of severe symptoms.

Intestinal anthrax following consumption of contaminated meat results in nausea, loss of appetite, vomiting, fever, abdominal pain, vomiting of blood and severe diarrhoea. Up to 60% of cases will die without treatment.

Anthrax is usually diagnosed by isolating *Bacillus anthracis* from the blood, skin lesions or respiratory secretions. Anthrax is a potential agent for use in biological warfare.

Incubation period

(time between becoming infected and developing symptoms)

Usually 1 – 7 days, but can be up to 2 months.

Infectious period

(time during which an infected person can infect others)

Person-to-person transmission of anthrax is very rare and has been reported only with cutaneous anthrax.

Articles and soil contaminated with anthrax spores may remain infective for decades.

Treatment

Treatment with antibiotics is essential, particularly for inhalational anthrax. In some situations preventative antibiotics may also be given to people who are suspected to have been exposed to anthrax spores.

Control of spread

- Control of anthrax in livestock herds is essential for prevention of its spread to humans. Animals dying from anthrax usually die suddenly, with only a brief illness preceding death. By law, a farmer who suspects anthrax in an animal must notify a government veterinary officer immediately. If anthrax is suspected the farm will be isolated and herds vaccinated, and the dead animal disposed of appropriately so that contamination of the soil is minimised.
- Anthrax vaccines exist for use in livestock in Australia, but are not currently registered for use in humans. They have been used for protection of military personnel who are considered to be at risk of exposure to biological weapons.

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Anthrax (cont.)

Control of spread cont.

- Safety regulations covering rendering plants and factories processing wool and hides must be adhered to. Workers should also wear protective clothing.
- Even a single case of human anthrax is so unusual in Australia that it should be reported urgently to public health authorities. Anthrax spores have been used in bioterrorist attacks in the United States during the past few years, and it is important that sources of any infections are identified quickly so that control measures may be put into place.

! Anthrax is a notifiable disease

Useful website

- **Animal Health Australia**
  http://www.animalhealthaustralia.com.au

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